





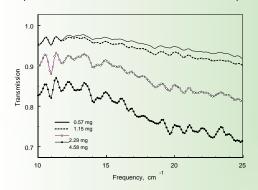
Thomas Jefferson National Accelerator Facility Accelerator and Physics Divisions

Development & Demonstration of a Prototype Terahertz Radiation System for Detection and Characterization of Chemical, Biological and Concealed Weapons

Gwyn Williams (Jefferson Lab) Co-PI: Alan Todd (AES)



Detection and characterization of concealed biological and chemical weapons, including plastic and other explosives



Spectrum of bacillus subtilis showing THz spectral bands Globus et al. J. Appl. Phys. 91, 6105 (2002)



Harmless monitoring



AES 15 MeV accelerator system similar to proposed THz source



Detection of concealect weapons on personnel and in minefields



THz emission image of person carrying gun. Courtesy ESA

- THz lies between photonics and electronics (10¹² Hz)
- · Next frontier in imaging technology
- High power for full-field imaging
- Produced by coherent synchrotron radiation emission
- THz beams penetrate many materials

